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RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/885,188

DATE: 01/25/2002

TIME: 17:01:04

Input Set : N:\Crf3\RULE60\09885188.raw
Output Set: N:\CRF3\01252002\I885188.raw

SEQUENCE LISTING

- 1 (1) GENERAL INFORMATION:
2 (i) APPLICANT: Chris Somerville
3 Pierre Broun
4 Frank van de Loo
5 (ii) TITLE OF INVENTION: Production of Hydroxylated Fatty Acids in
6 Genetically Modified Plants
7 (iii) NUMBER OF SEQUENCES: 15
8 (iv) CORRESPONDENCE ADDRESS:
9 (A) ADDRESSEE: Pillsbury Winthrop, L.L.P.
0 (B) STREET: 1600 Tysons Boulevard
1 (C) CITY: McLean
2 (D) STATE: VA
3 (E) COUNTRY: USA
4 (F) ZIP: 22102
5 (v) COMPUTER READABLE FORM:
6 (A) MEDIUM TYPE: Diskette, 3.50 inch
7 (B) COMPUTER: IBM PC-compatible
8 (C) OPERATING SYSTEM: MS-DOS
9 (D) SOFTWARE: MS Word
0 (vi) CURRENT APPLICATION DATA:
1 (A) APPLICATION NUMBER: US/09/885,188
2 (B) FILING DATE: 21-Jun-2001
3 (C) CLASSIFICATION:
4 (vii) PRIOR APPLICATION DATA:
5 (A) APPLICATION NUMBER: US/08/530,862B
6 (B) FILING DATE: 06-Feb-1996
7 (A) APPLICATION NUMBER: PCT/US95/11855
8 (B) FILING DATE: September 25, 1995
9 (A) APPLICATION NUMBER: US 08/530,862
0 (B) FILING DATE: September 20, 1995
1 (A) APPLICATION NUMBER: US 08/320,982
2 (B) FILING DATE: October 11, 1994
3 (A) APPLICATION NUMBER: US 08/314,596
4 (B) FILING DATE: September 26, 1994
5 (2) INFORMATION FOR SEQ ID NO: 1
6 (i) SEQUENCE CHARACTERISTICS:
7 (A) LENGTH: 543 nucleotides
8 (B) TYPE: nucleotide
9 (C) STRANDEDNESS: single
0 (D) TOPOLOGY: linear
1 (ii) MOLECULE TYPE: cDNA
2 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:
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RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/885,188

DATE: 01/25/2002
TIME: 17:01:04

Input Set : N:\Crf3\RULE60\09885188.raw
Output Set: N:\CRF3\01252002\I885188.raw

43	TATTGGCAC C GGCGGCACCA TTCCAACAAT GGATCCCTAG AAAAAGATGA AGTCTTGTC	60
44	CCACCTAAGA AAGCTGCA GT CANATGGTAT GTCAAATACC TCAACAACCC TCTTGGACGC	120
45	ATTCTGGTGT TAACAGTTCA GTTTATCCTC GGGTGGCCTT TGTATCTAGC CTTTAATGTA	180
46	TCAGGTAGAC CTTATGATGG TTTCGCTTC CATTCTTCC CTCATGCACC TATCTTAAG	240
47	GACCGTGAAC GTCTCCAGAT ATACATCTCA GATGCTGGTA TTCTAGCTGT CTGTTATGGT	300
48	CTTTACCGTT ACGCTGCTTC ACAAGGATTG ACTGCTATGA TCTGCGTCTA CGGAGTACCG	360
49	CTTTTGATAG TGAACTTTT CCTTGTCTTG GTCACTTCT TGCAAGCACAC TCATCCTTC	420
50	TTACCTCACT ATGATTCAAC CGAGTGGGAA TGGATTAGAG GAGCTTGTT TACGGTAGAC	480
51	AGAGACTATG GAATCTGAA CAAGGTGTTT CACAACATAA CAGACACCCA CGTAGCACAC	540
52	CAC	543

54 (2) INFORMATION FOR SEQ ID NO: 2

- 55 (i) SEQUENCE CHARACTERISTICS:
 - 56 (A) LENGTH: 544 nucleotides
 - 57 (B) TYPE: nucleotide
 - 58 (C) STRANDEDNESS: single
 - 59 (D) TOPOLOGY: linear

60 (ii) MOLECULE TYPE: cDNA

61 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:

62	TATAGGCACC GGAGGCACCA TTCCAACACA GGATCCCTCG AAAGAGATGA AGTATTGTC	60
63	CCAAAGCAGA AATCCGCAAT CAAGTGGTAC GGCGAATACC TCAACAACCC TCCTGGTCGC	120
64	ATCATGATGT TAACTGTCCA GTTCGTCCTC GGATGGCCCT TGTACTTAGC CTTCAACGTT	180
65	TCTGGCAGAC CCTACAATGG TTTCGCTTCC CATTCTTCC CCAATGCTCC TATCTAACAC	240
66	GACCGTGAAC GCCTCCAGAT TTACATCTCT GATGCTGGTA TTCTAGCCGT CTGTTATGGT	300
67	CTTTACCGTT ACGCTGTTGC ACAAGGACTA GCCTCAATGA TCTGTCTAAA CGGAGTTCCG	360
68	CTTCTGATAG TTAACTTTT CCTCGTCTTG ATCACTTACT TACAACACAC TCACCCCTGCG	420
69	TTGCCCTCACT ATGATTCACTC AGAGTGGGAT TGGCTTAGAG GAGCTTAGC TACTGTAGAC	480
70	AGAGACTATG GAATCTGAA CAAGGTGTTT CATAACATCA CAGACACCCA CGTCGCACAC	540
71	CACT	544

73 (2) INFORMATION FOR SEQ ID NO: 3

- 74 (i) SEQUENCE CHARACTERISTICS:
 - 75 (A) LENGTH: 1855 nucleotides
 - 76 (B) TYPE: nucleotide
 - 77 (C) STRANDEDNESS: single
 - 78 (D) TOPOLOGY: linear

79 (ii) MOLECULE TYPE: genomic

80 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:

81	ATGAAGCTTT ATAAGAAGTT AGTTTCTCT GGTGACAGAG AAATTNTGTC AATTGGTAGT	60
82	GACAGTTGAA GCAACAGGAA CAACAAGGAT GGTTGGTGT GATGCTGATG TGGTGATGTG	120
83	TTATTCTATCA AATACTAAAT ACTACATTAC TTGTTGCTGC CTACTTCTCC TATTCTCTCC	180
84	GCCACCCATT TTGGACCCAC GANCTTCCA TTTAAACCTT CTCTCGTGT ATTCAACCAGA	240
85	AGAGAAGCCA AGAGAGAGAG AGAGAGAATG TTCTGAGGAT CATTGTCTTC TTCATCGTTA	300
86	TTAACGTAAG TTTTTTGAA CCACCTATCTA CTAAATCTA GTACATGCAA TAGATTAATG	360
87	ACTGTCCTT CTTTGATAT TTTCAGCTTC TTGAATTCAA GATGGGTGCT GGTGGAAGAA	420
88	TAATGGTTAC CCCCTCTTCC AAGAAATCAG AAACTGAAGC CCTAAAACGT GGACCATGTG	480
89	AGAAACCACC ATTCACTGTT AAAGATCTGA AGAAAGCAAT CCCACAGCAT TGTTCAAGC	540
90	GCTCTATCCC TCGTTCTTC TCCTACCTTC TCACAGATAT CACTTAGTT TCTTGCTCT	600
91	ACTACGTTGC CACAAATTAC TTCTCTCTTC TTCCCTCAGCC TCTCTCTACT TACCTAGCTT	660
92	GGCCTCTCTA TTGGGTATGT CAAGGCTGTG TCTTAACCGG TATCTGGTCA ATTGGCCATG	720
93	AATGTGGTCA CCATGCATTC AGTGAATCTC AATGGGTAGA TGACACTGTT GGTTTATCT	780

RAW SEQUENCE LISTING
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Input Set : N:\Crf3\RULE60\09885188.raw
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94	TCCATTCCTT CCTTCTCGTC CCTTACTTCT CCTGGAAATA CAGTCATCGT CGTCACCATT	840
95	CCAACAATGG ATCTCTCGAG AAAGATGAAG TCTTTGTCCT ACCGAAGAAA GCTGCAGTCA	900
96	AATGGTATGT TAAATACCTC AACAAACCCCT TTGGACGCAT TCTGGTGTAA ACAGTTCA	960
97	TTATCCTCGG GTGGCCTTG TATCTAGCCT TTAATGTATC AGGTAGACCT TATGATGGTT	1020
98	TCGCTTCACA TTTCTCCCT CATGCCACTA TCTTTAAAGA CCGAGAACGC CTCCAGATAT	1080
99	ACATCTCAGA TGCTGGTATT CTAGCTGTCT GTTATGGTCT TTACCGTTAC GCTGCTTCAC	1140
100	AAGGATTGAC TGCTATGATC TGCGTCTATG GAGTACCGCT TTTGATAGTG AACTTTTCC	1200
101	TTGCTTGGT AACCTTCCTG CAGCACACTC ATCCTTCGTT ACCTCATTAT GATTCAACCG	1260
102	AGTGGGAATG GATTAGAGGA GCTTTGGTTA CGGTAGACAG AGACTATGGA ATATTGAACA	1320
103	AGGTGTTCCA TAACATAACA GACACACATG TGGCTCATCA TCTCTTGCA ACTATACCGC	1380
104	ATTATAACGC AATGGAAGCT ACAGAGGCCA TAAAGCCAAT ACTTGGTGAT TACTACCACT	1440
105	TCGATGGAAC ACCGTGGTAT GTGCCATGT ATAGGGAAGC AAAGGAGTGT CTCTATGTAG	1500
106	AACCGGATAC GGAACGTGGG AAGAAAGGTG TCTACTATTA CAACAATAAG TTATGAGGCT	1560
107	GATAGGGCGA GAGAAGTGCA ATTATCAATC TTCATTCCA TGTTTAGGT GTCTTGTAA	1620
108	AGAAGCTATG CTTTGTTCATAATCTCAG AGTCCATNTA GTTGTGTTCT GGTGCATTT	1680
109	GCCTAGTTAT GTGGTGTGCG AAGTTAGTGT TCAAACGTCT TCCTGCTGTG CTGCCAGTG	1740
110	AAGAACAAAGT TTACGTGTT AAAATACTCG GAACGAATTG ACCACAANAT ATCCAAAACC	1800
111	GGCTATCCGA ATTCCATATC CGAAAACCGG ATATCCAAAT TTCCAGAGTA CTTAG	1855

113 (2) INFORMATION FOR SEQ ID NO: 4

114 (i) SEQUENCE CHARACTERISTICS:

- 115 (A) LENGTH: 384 amino acids
- 116 (B) TYPE: amino acid
- 117 (C) STRANDEDNESS:

118 (D) TOPOLOGY: linear

119 (ii) MOLECULE TYPE: protein

120 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:

121	Met Gly Ala Gly Gly Arg Ile Met Val Thr Pro Ser Ser Lys Lys Ser	
122	1 5 10 15	
123	Glu Thr Glu Ala Leu Lys Arg Gly Pro Cys Glu Lys Pro Pro Phe Thr	
124	20 25 30	
125	Val Lys Asp Leu Lys Lys Ala Ile Pro Gln His Cys Phe Lys Arg Ser	
126	35 40 45	
127	Ile Pro Arg Ser Phe Ser Tyr Leu Leu Thr Asp Ile Thr Leu Val Ser	
128	50 55 60	
129	Cys Phe Tyr Tyr Val Ala Thr Asn Tyr Phe Ser Leu Leu Pro Gln Pro	
130	65 70 75 80	
131	Leu Ser Thr Tyr Leu Ala Trp Pro Leu Tyr Trp Val Cys Gln Gly Cys	
132	85 90 95	
133	Val Leu Thr Gly Ile Trp Val Ile Gly His Glu Cys Gly His His Ala	
134	100 105 110	
135	Phe Ser Asp Tyr Gln Trp Val Asp Asp Thr Val Gly Phe Ile Phe His	
136	115 120 125	
137	Ser Phe Leu Leu Val Pro Tyr Phe Ser Trp Lys Tyr Ser His Arg Arg	
138	130 135 140	
139	His His Ser Asn Asn Gly Ser Leu Glu Lys Asp Glu Val Phe Val Pro	
140	145 150 155 160	
141	Pro Lys Lys Ala Ala Val Lys Trp Tyr Val Lys Tyr Leu Asn Asn Pro	
142	165 170 175	
143	Leu Gly Arg Ile Leu Val Leu Thr Val Gln Phe Ile Leu Gly Trp Pro	

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/885,188

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Input Set : N:\Crf3\RULE60\09885188.raw
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144	180	185	190
145	Leu Tyr Leu Ala Phe Asn Val Ser Gly Arg Pro Tyr Asp Gly Phe Ala		
146	195	200	205
147	Ser His Phe Phe Pro His Ala Pro Ile Phe Lys Asp Arg Glu Arg Leu		
148	210	215	220
149	Gln Ile Tyr Ile Ser Asp Ala Gly Ile Leu Ala Val Cys Tyr Gly Leu		
150	225	230	235
151	Tyr Arg Tyr Ala Ala Ser Gln Gly Leu Thr Ala Met Ile Cys Val Tyr		
152	245	250	255
153	Gly Val Pro Leu Leu Ile Val Asn Phe Phe Leu Val Leu Val Thr Phe		
154	260	265	270
155	Leu Gln His Thr His Pro Ser Leu Pro His Tyr Asp Ser Thr Glu Trp		
156	275	280	285
157	Glu Trp Ile Arg Gly Ala Leu Val Thr Val Asp Arg Asp Tyr Gly Ile		
158	290	295	300
159	Leu Asn Lys Val Phe His Asn Ile Thr Asp Thr His Val Ala His His		
160	305	310	315
161	Leu Phe Ala Thr Ile Pro His Tyr Asn Ala Met Glu Ala Thr Glu Ala		
162	325	330	335
163	Ile Lys Pro Ile Leu Gly Asp Tyr Tyr His Phe Asp Gly Thr Pro Trp		
164	340	345	350
165	Tyr Val Ala Met Tyr Arg Glu Ala Lys Glu Cys Leu Tyr Val Glu Pro		
166	355	360	365
167	Asp Thr Glu Arg Gly Lys Lys Gly Val Tyr Tyr Tyr Asn Asn Lys Leu		
168	370	375	380

170 (2) INFORMATION FOR SEQ ID NO: 5

171 (i) SEQUENCE CHARACTERISTICS:

- 172 (A) LENGTH: 387 amino acids
- 173 (B) TYPE: amino acid
- 174 (C) STRANDEDNESS:
- 175 (D) TOPOLOGY: linear

176 (ii) MOLECULE TYPE: protein

177 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5:

178	Met Gly Gly Gly Gly Arg Met Ser Thr Val Ile Thr Ser Asn Asn Ser		
179	1	5	10
180	Glu Lys Lys Gly Gly Ser Ser His Leu Lys Arg Ala Pro His Thr Lys		
181	20	25	30
182	Pro Pro Phe Thr Leu Gly Asp Leu Lys Arg Ala Ile Pro Pro His Cys		
183	35	40	45
184	Phe Glu Arg Ser Phe Val Arg Ser Phe Ser Tyr Val Ala Tyr Asp Val		
185	50	55	60
186	Cys Leu Ser Phe Leu Phe Tyr Ser Ile Ala Thr Asn Phe Phe Pro Tyr		
187	65	70	75
188	Ile Ser Ser Pro Leu Ser Tyr Val Ala Trp Leu Val Tyr Trp Leu Phe		
189	85	90	95
190	Gln Gly Cys Ile Leu Thr Gly Leu Trp Val Ile Gly His Glu Cys Gly		
191	100	105	110
192	His His Ala Phe Ser Glu Tyr Gln Leu Ala Asp Asp Ile Val Gly Leu		
193	115	120	125

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/885,188

DATE: 01/25/2002
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Input Set : N:\Crf3\RULE60\09885188.raw
Output Set: N:\CRF3\01252002\I885188.raw

194 Ile Val His Ser Ala Leu Leu Val Pro Tyr Phe Ser Trp Lys Tyr Ser
195 130 135 140
196 His Arg Arg His His Ser Asn Ile Gly Ser Leu Glu Arg Asp Glu Val
197 145 150 155 160
198 Phe Val Pro Lys Ser Lys Ser Ile Ser Trp Tyr Ser Lys Tyr Ser
199 165 170 175
200 Asn Asn Pro Pro Gly Arg Val Leu Thr Leu Ala Ala Thr Leu Leu
201 180 185 190
202 Gly Trp Pro Leu Tyr Leu Ala Phe Asn Val Ser Gly Arg Pro Tyr Asp
203 195 200 205
204 Arg Phe Ala Cys His Tyr Asp Pro Tyr Gly Pro Ile Phe Ser Glu Arg
205 210 215 220
206 Glu Arg Leu Gln Ile Tyr Ile Ala Asp Leu Gly Ile Phe Ala Thr Thr
207 225 230 235 240
208 Phe Val Leu Tyr Gln Ala Thr Met Ala Lys Gly Leu Ala Trp Val Met
209 245 250 255
210 Arg Ile Tyr Gly Val Pro Leu Leu Ile Val Asn Cys Phe Leu Val Met
211 260 265 270
212 Ile Thr Tyr Leu Gln His Thr His Pro Ala Ile Pro Arg Tyr Gly Ser
213 275 280 285
214 Ser Glu Trp Asp Trp Leu Arg Gly Ala Met Val Thr Val Asp Arg Asp
215 290 295 300
216 Tyr Gly Val Leu Asn Lys Val Phe His Asn Ile Ala Asp Thr His Val
217 305 310 315 320
218 Ala His His Leu Phe Ala Thr Val Pro His Tyr His Ala Met Glu Ala
219 325 330 335
220 Thr Lys Ala Ile Lys Pro Ile Met Gly Glu Tyr Tyr Arg Tyr Asp Gly
221 340 345 350
222 Thr Pro Phe Tyr Lys Ala Leu Trp Arg Glu Ala Lys Glu Cys Leu Phe
223 355 360 365
224 Val Glu Pro Asp Glu Gly Ala Pro Thr Gln Gly Val Phe Trp Tyr Arg
225 370 375 380
226 Asn Lys Tyr
227 385
228 (2) INFORMATION FOR SEQ ID NO: 6
229 (i) SEQUENCE CHARACTERISTICS:
230 (A) LENGTH: 383 amino acids
231 (B) TYPE: amino acid
232 (C) STRANDEDNESS:
233 (D) TOPOLOGY: linear
234 (ii) MOLECULE TYPE: protein
235 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 6:
236 Met Gly Ala Gly Gly Arg Met Pro Val Pro Thr Ser Ser Lys Lys Ser
237 1 5 10 15
238 Glu Thr Asp Thr Thr Lys Arg Val Pro Cys Glu Lys Pro Pro Phe Ser
239 20 25 30
240 Val Gly Asp Leu Lys Lys Ala Ile Pro Pro His Cys Phe Lys Arg Ser
241 35 40 45
242 Ile Pro Arg Ser Phe Ser Tyr Leu Ile Ser Asp Ile Ile Ala Ser
243

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/885,188

DATE: 01/25/2002

TIME: 17:01:06

Input Set : N:\Crf3\RULE60\09885188.raw
Output Set: N:\CRF3\01252002\I885188.raw

L:21 M:220 C: Keyword misspelled or invalid format, [(A) APPLICATION NUMBER:]

L:22 M:220 C: Keyword misspelled or invalid format, [(B) FILING DATE:]